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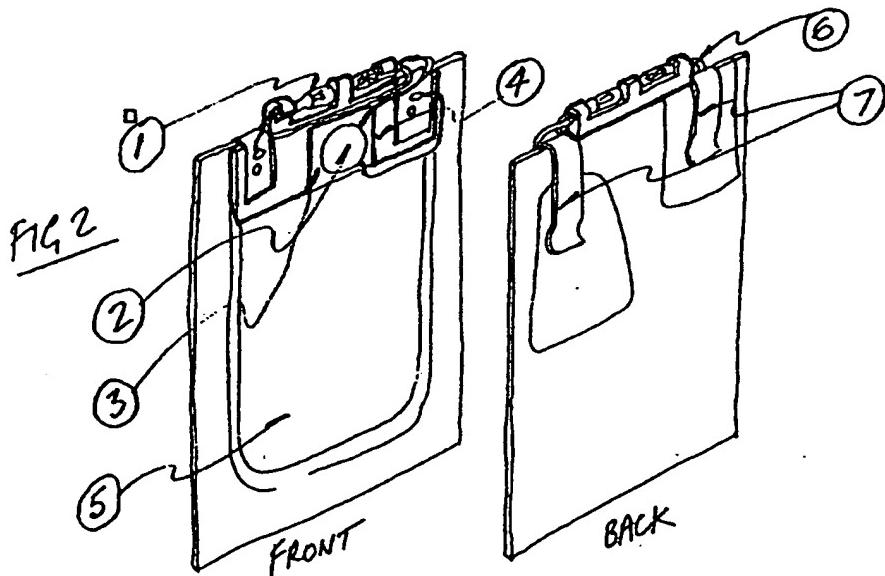
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US 5457613 A

(58) Field of Search
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(54) Planar disposable flashlight

(57) A planar disposable flashlight has a one-piece housing for mounting the elements of the flashlight in a fixed structural relationship while providing support and protection to the flashlight. A recessed area is provided for securing a pressure sensitive switch therein, bordered by columns which protect the switch from inadvertent activation. Platforms project from the columns and provide a mounting location for clips which connect to the battery's terminals. In a preferred embodiment, the platforms include pegs which mate with apertures on the clips to secure the clips to the housing and also to properly position the clips in relation to the battery's terminals. The one piece housing includes a pair of resilient C-shaped clamps which releasably grasp a pair of light bulbs and position the light bulbs in a predetermined position, and a protective bumper is provided which separates the light bulbs and protects them from impact by a direct line force. The housing also comprises channels which communicate the electrical leads from the light bulbs to the switch and the connections to the battery's terminals, securing the leads from crimping or snagging.



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IMPROVEMENT TO
LAMP/SWITCH ASSEMBLY

FIG. 1

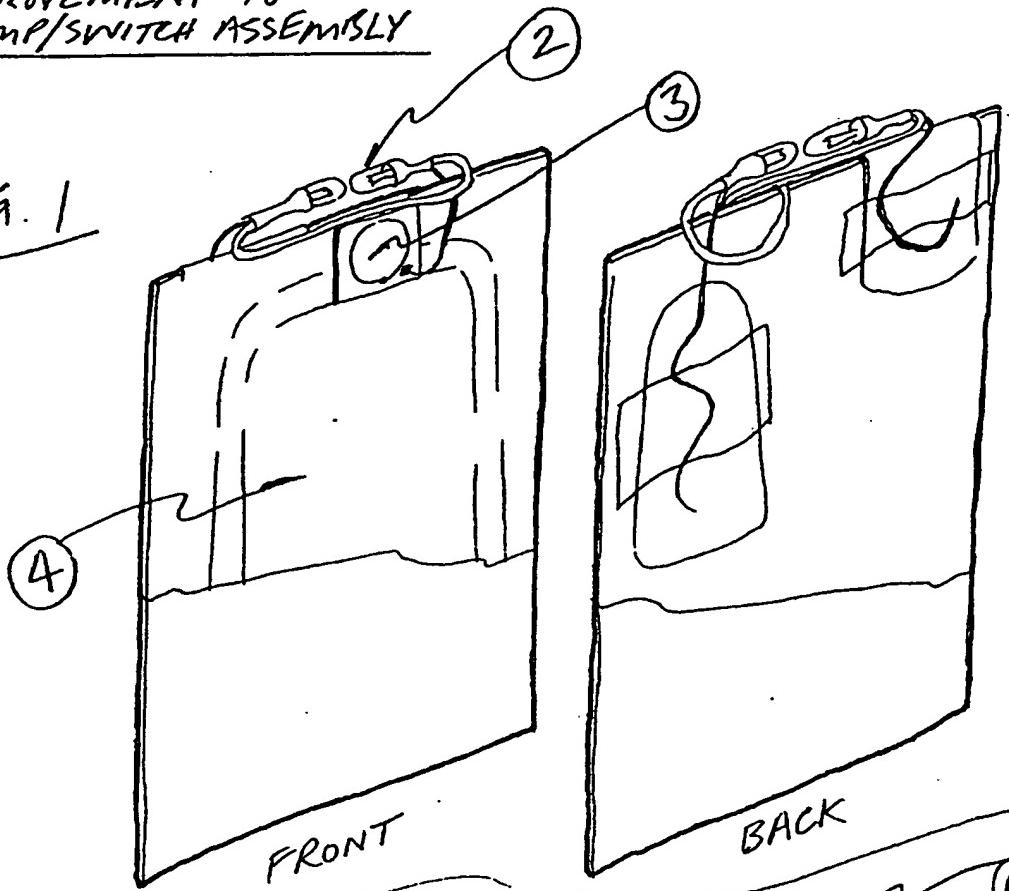
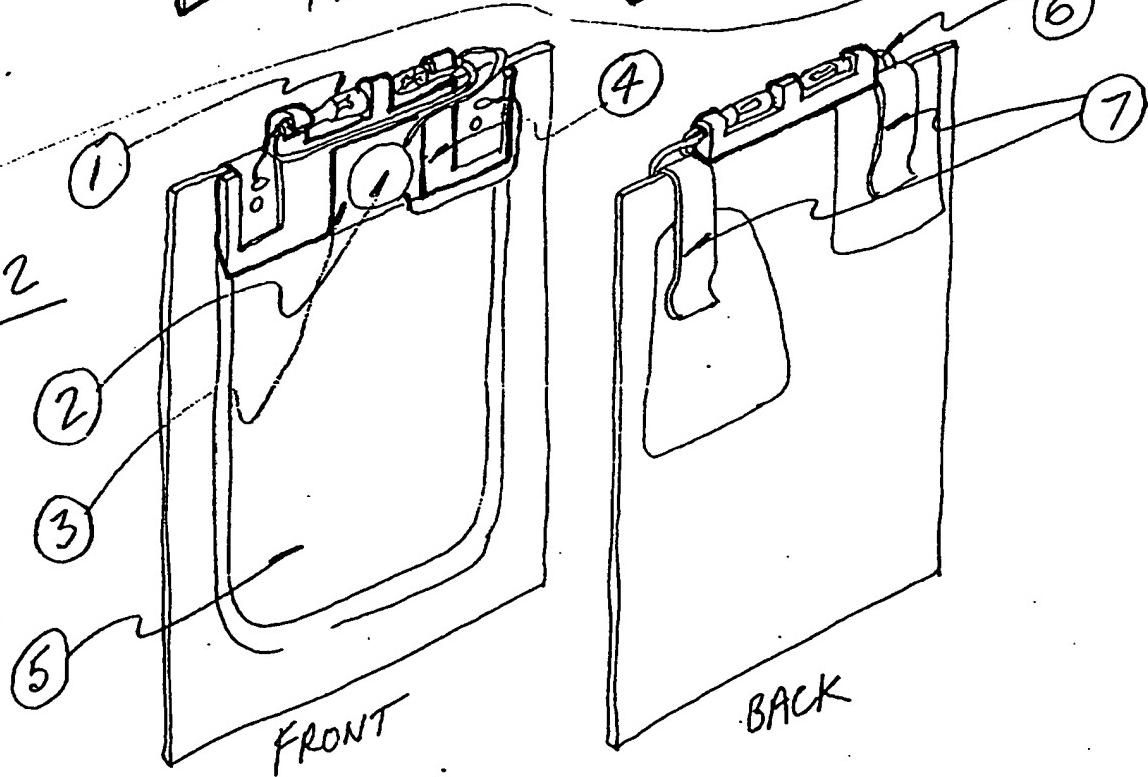


FIG 2



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Improvement to Lamp/Switch assembly DESCRIPTION

This invention is an improvement to a lamp/switch assembly used on pocket torches for instance. The assembly comprises(see figure 1): two lamps on flexible leads(2), connected to a dome switch mounted on a printed circuit board(3) with additional leads to a battery(4). The switch activates the lamps. The assembly is covered by a semi rigid envelope of cardboard or plastic.

The problems with the current device are as follows:

- (1) The lamps are vulnerable to breakage if the assembly is crushed.
- (2) The switch can be accidentally activated if the assembly is crushed.
- (3) The contacts to the battery are unreliable.
- (4) Assembly time of all components is too long.
- (5) The parts are easily misaligned.

The improved device (see fig.2) consists of one or two lamps (bulbs)(1), a dome switch(2), a printed circuit board(3), a plastic moulding(4), a low profile battery(5), flexible or rigid leads(6) and metal battery contact clips(7).

The plastic moulding (4) protects the switch from accidental activation as it is slightly recessed within the moulding so only a probe such as a finger for instance can activate it. The lamps are similarly protected from crushing as the plastic housing is slightly wider than the diameter of the lamps.

The plastic moulding(4) also houses two spring metal contacts(7) which enable the complete assembly to be slid over the battery(5), keeping the plastic moulding in place and making efficient contact with the battery. All parts are neatly aligned within the housing.

The advantages of the device described above are as follows:-

- (1) The lamps are protected from breakage.
- (2) The switch is prevented from accidental activation.
- (3) The battery contact clips provide good contact.
- (4) Assembly time of components is reduced.
- (5) The parts are neatly aligned and held in place.

CLAIMSWhat Is Claimed Is:

- 1 1. A one piece housing for a disposable planar flashlight assembly
2 comprising:
3 a substantially planar body having first and second spaced apart columns
4 and a recessed switch area therebetween, said switch area sized to receive a
5 pressure sensitive switch substantially therein with said first and second columns
6 extending above said pressure sensitive switch, and first and second platforms,
7 each depending from one of said first and second columns and adapted to
8 receive an electrical contact substantially thereon; and
9 first bulb securing means integrally connected with said planar body.
- 1 2. The one piece housing as recited in Claim 1 further comprising means
2 for securing said electrical contacts to said first and second platforms.
- 1 3. The one piece housing as recited in Claim 2 wherein said means for
2 securing said electrical contacts to said first and second platforms comprises an integral
3 peg protruding from each of said first and second platforms and sized to engage a hole
4 in said electrical contact.
- 1 4. The one piece housing as recited in Claim 1 further comprising second
2 bulb securing means integrally connected with said planar body and spaced from said
3 first bulb securing means.
- 1 5. The one piece housing as recited in Claim 1 wherein said first and
2 second platforms have a thickness such that a height of a combination of the electrical
3 contact and the platform is less than a height of the column adjacent thereto.

1 6. The one piece housing as recited in Claim 1 wherein said first bulb
2 securing means comprises a resilient C-shaped clamp adapted to removably retain said
3 bulb therein.

1 7. The one piece housing as recited in Claim 1 further comprising a first
2 channel connecting said recessed switch area with a bulb disposed in said first bulb
3 securing means, said first channel sized to communicate an electrical lead therein.

1 8. The one piece housing as recited in Claim 1 further comprising a passage
2 in one of said first and second columns, said passage connecting said recessed switch
3 area and one of said first and second platforms, said passage sized to communicate an
4 electrical lead from an electrical contact on said platform to said pressure sensitive
5 switch.

1 9. The one piece housing as recited in Claim 1 further comprising bumper
2 means adjacent said first bulb securing means and projecting from said housing for
3 deflecting contact from an impacting body prior to impact with a bulb in said bulb
4 securing means.

1 10. A planar flashlight assembly comprising:
2 a light bulb;
3 first and second electrical contacts, said first electrical contact operably
4 connected to said light bulb;
5 a pressure sensitive electrical switch operably connected to said second
6 electrical contact; and
7 a one piece planar housing adapted to releasably secure in an operable
8 relationship the light bulb, the first and second electrical contacts, and the
9 pressure sensitive switch, said one piece planar housing comprising:
10 a resilient clamp adapted to secure the light bulb therein;
11 a first recessed region sized to receive the pressure sensitive
12 switch therein, and

13 channels connecting said recessed region with said light bulb and said
14 electrical contacts with said light bulb.

1 11. A disposable planar flashlight comprising:
2 a planar power source including first and second electrical contacts on a
3 first surface thereof;
4 a light bulb;
5 a pressure sensitive switch;
6 first and second electrically conducting clamps, said first clamp
7 connected to said light bulb and said second clamp connected to said pressure
8 sensitive switch; and
9 a one piece planar housing comprising peg means for securing said first
10 and second clamps to said one piece planar housing such that said first and
11 second clamps are properly positioned to contact said first and second electrical
12 contacts on said planar power source, said one piece planar unit further
13 comprising means for securing said pressure sensitive switch thereto, and means
14 for releasably securing said light bulb thereto.



The
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Office

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Claims searched: 1

Examiner: C A Clarke
Date of search: 16 September 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): F4R (RE,RL,RCM)

Int Cl (Ed.6): F21L 7/00

Other: ONLINE: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	US 5457613 LUMATEC see claim 5 and figs	1

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| X Document indicating lack of novelty or inventive step | A Document indicating technological background and/or state of the art. |
| Y Document indicating lack of inventive step if combined with one or more other documents of same category. | P Document published on or after the declared priority date but before the filing date of this invention. |
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